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# VARIOUS.

## JADE.

A number of sales of Japanese and Chinese curiosities have recently taken place in New York, in which were included objects made of a material little seen in this part of the world, and about which little is here known. It is a precious stone, valuable not on account of its scarcity, because in China and Burmah large mines of it exist, but for the great difficulty in cutting and carving it, necessitating an amount of patience and manual dexterity rarely found save among the inhabitants of the celestial kingdom. It is a silicate of alumina called jade, and is obtained in Tartary, various parts of China, and in the Mogoung districts of North Burmah. The true jade is hard enough to cut glass or quartz, and the most valuable pieces are of an intensely bright green hue, the ordinary material being pink and yellow. As many as 1,600 men are engaged in the jade mines of Burmah, and the substance is sometimes found in huge blocks, which three men can hardly move. The crude fragments, are cut by means of thin copper disks, used in conjunction with fine silicious grit, composed of quartz and little particles resembling ruby dust. The boring of earrings and bracelets is effected by a revolving cylinder tipped at the free end with the same silicious mixture. The Chinese, with their proverbial ingenuity, make an almost perfect imitation of jade out of rice, the quality of hardness alone being absent. *Scientific American.*

## DEEP RED GLASS.

Pettenkofer, who analyzed the intense red glass used in antique mosaics, proposed to make it by fusing lead glass with about 9 per cent of oxide of copper and 3 per cent protosesquioxide of copper as a reducing agent. In this case, however, some of the lead is also reduced, giving a dark brown or black color to the glass, and hence Dr. Kayser employs borax as the flux. The following proportions are taken: clean quartz sand 60 parts; oxide of copper, 10 parts; protosesquioxide of iron, 3 parts; calcined borax, 10 parts; calcined soda, 10 parts. A high temperature should be employed during the fusing and reduction, and then, it should be moderated to a dark red and kept there some time. When cold, the red glass will be covered with a thin layer of green copper glass. *Scientific American.*

## MOTHS IN CARPETS.

Moths will work in carpets in rooms that are kept warm in winter as well as in summer. A sure method of removing the pests, is to pour strong alum-water on the floor to the distance of half a yard around the edges before laying the carpets. Then once or twice during the season sprinkle dry salt over the carpet before sweeping. Insects do not like salt, and sufficient adheres to the carpet to prevent them alighting upon it.

*The Gardener's Magazine.*

## UTILISATION OF SLAG.

An important process for the utilisation of slag has recently been introduced on the Continent. The slag is reduced to a fine state of division, in which it becomes capable of a great variety of uses in addition to those for which it was originally supposed to be adapted. The channel through which the molten slag flows from the furnace is made, in this arrangement, to terminate in a running stream of water leading into a pit or excavation. On striking the water the lava stream of slag is blown and broken into a sort of fine porous gravel, which the flow of the water then bears along into the pit. Meanwhile the iron grains contained in the slag, which previously were seperated by crushing, are now sorted out by this water process, sinking to the bottom by their weight instead of being carried on with the rest. The slag sand accumulating to the pit is charged thence into wagons or railway cars by means of an endless chain and buckets driven by an engine run by hot gases from the furnace. Thus treated the artificial sand or granulated slag is said to be not merely easier and cheaper te get rid of, but applicable to a number of valuable uses. One of these is for casting sand, pigs made in such a bed coming out exceedingly bright. For this purpose the material is now very largely used in some parts of France, Belgium and Russia. The next step was a natural outgrowht of the last — to use the fines portions, separated by sifting, to sand the moulds for fine castings, thus employed, it is found cleaner and better than common sand and the castings are improved. Another use to which this artificial or metallic gravel is put, is that for ballasting railroad tracks, for which it is very serviceable. Being also very porous, packing well, and holding but little wet, this slag-sand forms a valuable concrete-like mortar, and not only this, but is capable of being used for cement. This is regarded, in fact, as its most important speciality. it being found that first-class cement can be thus obtained from almost any slag at a very small cost. Other uses for this substance are likewise mentioned, such as employing it upon land for the lime and silica contained, manufacturing fire-brick, etc., and enamelled bricks of different colours may be manufactured cheaply from this hitherto waste material, and this being the case its industrial value, under the hand of wise improvement, is likely to be very great. *The Builder from the Mining Journal.*

## RENDLE'S PATENT SYSTEM OF GLAZING.

This system is especially adapted to the glazing of railway stations, as it entirely does away with the great difficulty, which has always arisen from the vibration, which produced by the railway traffic, particularly at intermediate stations, from the shaking caused by express trains. In roofs glazed in the ordinary manner the putty becomes almost entirely shaken out, and of course the glass soon follows, and the cost for repairs is found very heavy. The adoption of Rendle's system avoids this heavy item in the annual charge for maintenance of roofs, and moreover offers many other advantages. Straight glass can be used for circular roofs, with an immense saving, not only in the cost of the glass itself, but in that of the iron sash bars and subsequent repairs. Complete protection is afforded to the iron and woodwork of the roof, which is all covered by the glass; all moisture is carried off, not only from the outside, but from the inside as well, and the work of glazing can be done in one fourth of the time occupied by men working on the ordinary system. Roofs glazed on Rendle's system withstand storms and rough weather far better than putty-glazed roofs. — The great roof of the Westminster Aquarium, while only half completed, having been exposed to one of the heaviest storms of the past preeminently stormy winter, without the displacement of a single square of glass. A still more severe test was applied lately by the War Department, under the direction of Lieut.-Col. Scratchley, K. E. Inspector of Works. A sky-light 12ft. square was inserted in the roof of a railway shed at the Royal Arsenal at Woolwich and a heavy stream of water was poured on it from a hose attached to the fire main. The result was altogether satisfactory, no leakage whatever being observable.

*The Building News.*

## PHOTOGRAPHIC POLICHROME.

M. Leon Vidal has discovered a method of reproducing in all their various colours the objects which photography represents in only one colour. Numerous remarkable specimens of the application of the process have been examined by competent authorities, and pronounced satisfactory. It is evident that if it can be brought into use, it may be the means of rendering valuable service to art by a more effective reproduction of masterpieces in painting and sculpture than has yet been accomplished.